

REMARKS

The Office Action dated May 14, 2008 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 3-4, 7-9, 13-16, and 18-32 are currently pending for consideration, of which claims 1, 8, 14-15, 20-22, and 31-32 are independent. In particular, Applicants herein amend claims 1, 8, 13-16, 18, 20-22, and 31-32 to more particularly point out and distinctly claim the subject matter that the Applicants regard as the invention. Entry of the amendments are respectfully requested because the amendments add no new subject matter to the present application and serve only to place the present application in better condition for examination. All grounds for rejection in the Office Action are currently addressed, and the Applicants respectfully submit that the present application is in condition for allowance in view of the claim amendments and the following remarks. Claims 1, 3-4, 7-9, 13-16, and 18-32 are therefore presented for reconsideration.

Rejection under 35 U.S.C. §112, Second Paragraph

Claims 8-9 and 13 were rejected under 35 U.S.C. §112, second paragraph, as allegedly failing to particularly point out and distinctly claim the subject matter that the Applicants regard as the invention. Specifically, the Office Action rejected claim 8 as being allegedly patentable because the limitation of “the allocation of the communication resource” in claim 8 lacked proper antecedent basis, and dependent claims 9 and 13 were

rejected as depending from a rejected claim. In response to this rejection, Applicants have amended claim 8 to address the antecedent basis concern. Accordingly, Applicants urge that this rejection is now moot in view of the present amendment to claim 8 and should be withdrawn. Reconsideration and allowance of claims 8-9 and 13 are respectfully requested.

Rejection under 35 U.S.C. §102(e)

Claim 14 was rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Publication No. 2002/0114292 (Kawabata). As described below, this rejection is legally and technically improper and should be withdrawn. Reconsideration and allowance of claim 14 are respectfully requested in view of the following explanation.

Independent claim 14 relates to an apparatus that includes a controller configured to control allocation of communication resources for a mobile station. The allocation is based upon queue length information received embedded in a data block from the mobile station.

Applicants respectfully submit that Kawabata fails to disclose or suggest all of the features of claim 14, as described above.

Applicants respectfully note that certain embodiments of the present application relate to including queue information within data packets transmitted between devices (see, paragraph [0026] of the corresponding published application).

In contrast, Kawabata relates to a radio channel assigning device having an assignment request table for detecting the queuing time of data which is queuing in the

respective terminal stations, and a channel assignment algorithm controlling the assignment capacity of the communication channels, based on a queuing-time distribution detected by the assignment request table, so as to detect a queuing-time distribution of the transmission data and to respond to delays in order of a queuing time.

Thus, the assignment requests containing queue information in Kawabata are received over a separate communications over a control channel (see, Kawabata at paragraph [0074]) and cannot be “embedded in a data block” as recited in claim 14. In this way, Kawabata does not teach or suggest every limitation of claim 14. Applicants further note that embedding the queuing information in a data block provides significant technical benefits, for example, in the form of reduced signaling and a simplified configuration that can operate without multiple data and control signals.

Based at least on the above, Applicants respectfully submit that Kawabata fails to disclose or suggest all of the features recited in claim 14. Accordingly, withdrawal of this rejection under 35 U.S.C. §102(e) is respectfully requested.

Rejection under 35 U.S.C. §103(a)

Claims 1, 3-4, 7, 16, and 31 were rejected under 35 U.S.C. §103(a) as being obvious over EP 0981229 (Hwang), in view of U.S. Patent No. 6,785,262 (Yao). The Office Action took the position that Hwang disclosed all of the features of these claims except a controller, wherein the communications resources are allocated, and wherein the indication is a coded value of a length of a data queue. The Office Action asserted that Yao disclosed such features. Applicants respectfully submit that the cited references,

taken individually or in combination, fail to disclose or suggest all of the features recited in any of the pending claims.

Independent claim 1, from which claims 3-4, 7 and 16 depend, is directed to a method that includes monitoring a first network element for an indication of future need of communication resources in the first network element. The indication comprises a coded value of a length of a data queue in the first network element, and the length of the data queue is embedded in a data block from the first network element. The method further includes allocating the communications resources for a transmission between the first network element and a second network element based on the indication.

Independent claim 31 relates to a computer-readable medium having computer-executable components including monitoring a first network element for an indication of future need of communication resources in the first network element. The indication comprises a coded value of a length of a data queue in the first network element, and the length of the data queue is embedded in a data block from the first network element. The computer-executable components further include allocating the communications resources for a transmission between the first network element and a second network element based on the indication.

Applicants respectfully submit that the cited references fail to disclose or suggest all of the features of any of the above-described pending claims.

Hwang is directed to controlling asymmetric dynamic radio bearers in mobile packet data communications. Hwang describes establishing a plurality of radio bearers having a predetermined data. The amount of data stored in a transmit buffer during

transmission of the mobile data is examined. The mobile packet data is transmitted with the number of the radio bearers increased or decreased according to the amount of data in the transmit buffer. See, for example, paragraph [0025]. In this way, Applicants note that Hwang does not disclose at least the limitation of embedding queuing information in a data block.

Yao is directed to the reduction of voice latency in a voice over data wireless communication system. Yao discloses that vocoder frames are stored in the queue 408. The vocoder frames are later digitally modulated and upconverted for wireless transmission (see, Yao at col. 9 lines 17-20). Yao further discloses that the data stream 500 as shown in Fig. 5, represents the contents of the queue 408. A processor determines quality of the communications channel by determining the length of the queue (see, Yao at col. 12, lines 6-8). In this way, Applicants note that Yao also does not disclose at least the limitation of embedding queuing information in a data block.

The Office Action admitted that Hwang failed to disclose the feature of a controller, wherein the communications resources are allocated, and wherein the indication is a coded value of a length of a data queue, and relied on Yao to disclose this feature. Applicants respectfully submit that Yao fails to cure the admitted deficiencies of Hwang.

More specifically, Applicants respectfully submit that Yao fails to disclose or suggest a coded value as an indication of the length of the data queue as recited in the claim 1 and 31. The data stream 500 shows the actual contents of the queue and is not a coded indication of the queue's length. At best, it is an indication of the data rate (see,

Yao at col. 9, lines 57-59). Further, while Yao may disclose determining the quality of the communications channel by examining the length of the queue, Yao is silent with regards to generating a coded representation of the data queue's length. Thus, Yao merely discloses a coded value of the data rate, and in an unrelated process, uses the length of the queue to determine a rate at which frames are dropped. Thus, Yao fails to cure the admitted deficiencies of Hwang.

As admitted in the Office Action, Yao merely discloses a vocoder frame that contains a number of information bits depending on the data rate for the particular frame. The Office Action also asserted that Yao teaches that the processor can determine the channel quality based on the length of the data queue. As discussed in Applicant's previous correspondence, Applicants maintain that Yao is silent with regards to a coded representation of the data queues length. The mere mention of "information bits" and "length of the data queue" within the same document (Yao) does not equate to a disclosure of a coded representation of the data queue's length, by any reasonable interpretation.

Furthermore, as described above, neither Hwang nor Yao disclose embedding queuing information in a data block. As also described above, Applicants further submit that based on the above, the cited references of Hwang and Yao also fail to disclose or suggest at least the features of sending the indication from the first network element to a controller, wherein the indication is a coded value of a length of a data queue, controlling the communication resources between the first network element and a second network element based on this indication, and controlling communications resources in a

transmission from the first network element to the second network element, wherein the communication resources are allocated by the controller, as recited in claim 1. Applicants further submit that because claims 3-4, 7, and 16 depend from claim 1, these claims are allowable at least for the same reasons as claim 1, as well as for the additional features recited in these dependent claims.

Based at least on the above, Applicants respectfully submit that the cited references fail to disclose or suggest all of the features recited in claims 1, 3-4, 7 and 16. Accordingly, withdrawal of this rejection under 35 U.S.C. §103(a) is respectfully requested. For similar reasons, claim 31, although different in scope from claim 1, is also allowable. Reconsideration and allowance of claim 31 are therefore also requested.

The Office Action further rejected claims 8-9 and 13 under 35 U.S.C. §103(a) as being obvious over Yao and Hwang. The Office Action asserted that Yao disclosed all of the features of these claims except that the allocation being performed in accordance with information transmitted from the first stations which indicate a need for communication resources. The Office Action asserted that Hwang disclosed this feature. Applicants respectfully submit that the cited references, taken individually or in combination, fail to disclose or suggest all of the features recited in any of the pending claims.

Claim 8, from which claims 9 and 13, is directed to a system. First stations connect to a second station through communication links. A controller is configured to control the allocation of the communication resources among the communications links, and this controller is separate and independent from the first stations. The allocation is

performed in accordance with information transmitted from each of the first stations, and this information from each of the first stations includes a data block embedding a coded value of a length of a data queues in each of the first stations.

Hwang and Yao are discussed above. Applicants respectfully submit that these cited references also fail to disclose or suggest at least the feature of a controller, as recited in claim 8 for similar reasons as described above.

As discussed above, the cited references, particularly Yao, fail to disclose or suggest the feature of a coded value as an indication of the length of the data queue. In Yao, the data stream 500 shows the actual contents of the queue and is not a coded indication of the queue's length. At best, it is an indication of the data rate (see, Yao at col. 9 lines 57-59). Further, as also discussed above, Hwang fails to disclose or suggest the recitation of the allocation being performed in accordance with information transmitted from the first stations which indicate a need for communication resources because Hwang is silent with regards to allocating bandwidth.

Furthermore, as described above, neither Hwang nor Yao disclose embedding queuing information in a data block. Instead, Hwang discloses adjusting the number of the radio bearers for transmitting the mobile packet data in accordance with the amount of data in the transmit buffer. As also described above, Yao fails to disclose this limitation because this reference discloses, at best, transmitting an indication of channel quality and not of queue length in the transmitted data.

Applicants further submit that because claims 9 and 13 depend from claim 8, these claims are allowable at least for the same reasons as claim 8 as well as for the additional features recited in these dependent claims.

Based at least on the above, Applicants respectfully submit that the cited references of Hwang and Yao fail to disclose or suggest all of the features recited in claims 8, 9, and 13. Accordingly, withdrawal of this rejection under 35 U.S.C. §103(a) is respectfully requested.

The Office Action rejected claims 15, 19, 21-25, 29-30, and 32 under 35 U.S.C. §103(a) as being obvious over Yao in view of U.S. Patent No. 6,975,604 (Ishida). The Office Action took the position that Yao disclosed all of the features of these claims except a data generator. The Office Action asserted that Ishida disclosed this feature. Applicants respectfully submit that the cited references, taken individually or in combination, fail to disclose or suggest all of the features recited in claim 11. Claim 11 is currently cancelled, so this rejection is now moot.

Independent claim 15, from which claims 19, 29, and 30 depend, relates to an apparatus that includes a data generator and a data queue, configured to receive data packets from the data generator. An encoder in the system is configured to encode a code representative of a length of the data queue embedded in a data block. A transmitter is configured to transmit said data packets and said data block with said code included therein as a field.

Independent claim 21 relates to an apparatus that includes data generator means for generating data and data queue means for receiving data packets from the data generator means. Encoder means in the apparatus are for encoding a code representative of a length of the data queue means, wherein the encoder means embeds the length of the data queue in data block. Transmitter means in the apparatus are for transmitting said data packets and said data block, wherein said code is included therein as a field.

Independent claim 22, from which claims 23-25 depend, relates to a method, that includes generating data and encoding a code representative of a length of a data queue in a first network element. This length of the data queue is embedded in a data block and the data queue is configured to receive the generated data block. The data packets comprising a field comprising said code are transmitted, and this code is used when allocating communication resources for a transmission between the first network element and a second network element.

Independent claim 32 relates to a computer-readable medium having computer-executable components that includes generating data and encoding a code representative of a length of a data queue in a first network element. This length of the data queue is embedded in a data block and the data queue is configured to receive the generated data block. The data packets comprising a field comprising said code are transmitted, and this code is used when allocating communication resources for a transmission between the first network element and a second network element.

Applicants respectfully submit that the cited references fail to disclose or suggest all of the features of any of the pending claims. For example, Applicants respectfully

submit that the cited references fail to disclose or suggest at least the features of a data queue is configured to receive data packets from the data generator and that the queue length is embedded in the data block, as recited in claim 15.

As described in Applicants' prior Responses, Ishida relates to a communication system that includes a plurality of base stations to provide communication among a mobile station, another mobile station and a communication link. The communication links for use in the communication are selected base on the channel quality of the communications links. The communication information in Ishida is then demultiplexed for each selected link, and the data is sent parallel by way of the demultiplexed communication information along the selected communication links to enable transmission at higher speeds.

In this way, Ishida discloses a generator that sends data to an encoder circuit 616. As recited in independent claims 15, 21-22 and 32, the data generator data produced from the data generator of the present application is sent to the data queue. This feature is neither disclosed nor suggested in Ishida. For similar reasons, Applicants further note that Ishida also does not disclose at least the limitation from these claims of embedding queuing information in a data block because Ishida does not disclose transmission of the queue length in any way.

Based at least on the above, Applicants respectfully submit that the cited references fail to disclose or suggest all of the features recited in claims 15, 21-22 and 32. Accordingly, withdrawal of this rejection under 35 U.S.C. §103(a) is respectfully requested. Likewise, claims 19 and 29-30 depend from claim 15 and are allowable on

similar grounds. Likewise, Applicants further submit that because claims 23-25 depend from claim 22, claims 23-25 are allowable at least for the same reasons as claim 22, as well as for the additional features recited in these dependent claims.

Based at least on the above, Applicants respectfully submit that the cited references of Ishida and Yao fail to disclose or suggest all of the features recited in claims 15, 19, 21-25, 29-30, and 32. Accordingly, withdrawal of this rejection under 35 U.S.C. §103(a) and reconsideration of these claims are respectfully requested.

The Office Action rejected claim 20 under 35 U.S.C. §103(a) as being obvious over Yao. The Office Action asserted that Yao disclosed all of the features of these claims except decoding a code representative of a length of the data queue in at least one mobile station. The Office Action took the position that it would have been obvious for one skilled in the art to include a decoder because the decoder would decode the data frames generated by the voice encoder 406 based on the length of the queue. Applicants respectfully submit that Yao fails to disclose or suggest all of the features recited in any of the above claims.

Independent claim 20 relates to an apparatus that includes a decoder means for decoding a code representative of a length of a data queue in a mobile station, wherein the length of the data queue is embedded in a data block from the mobile station. The apparatus of claim 20 also includes a controller means for controlling allocation of communication resources. The decoder means provides queue length information for the mobile station to the controller.

Yao is discussed above. For example, the decoder 614 in Yao is a part of a receiver unit 600 that receives vocoder frames generated by the TCP processor, to generate a digitized replica of the original signal transmitted from the transmitter 400 (see, Yao at Figs. 4 and 6, column 13 lines 55-60). Yao does not disclose or suggest a base station that includes a decoder and a controller as recited in claim 20. For similar reasons, Applicants further note that Yao also does not disclose at least the limitation from these claims of embedding queuing information in a data block. Accordingly, Yao fails to disclose or suggest all of the features recited in claim 20.

Based at least on the above, Applicants respectfully submit that Yao fails to disclose or suggest all of the features of claim 20. Accordingly, withdrawal of this rejection under 35 U.S.C. §103(a) is respectfully requested. Reconsideration and allowance of claim 20 are therefore requested.

Claims 18 and 26-28 were rejected under 35 U.S.C. §103(a) as being obvious over Kawabata in view of Yao. The Office Action asserted that Kawabata disclosed all elements of these claims except for a decoder configured to decode information about a length of the data queue in a mobile station. The Office Action took the position that Yao cures this deficiency. Applicants respectfully submit that Kawabata Yao fails to disclose or suggest all of the features recited in any of the above claims.

Kawabata and Yao are described above. As an initial observation, Applicants note that claims 18 and 26-28 depend from claim 14, and therefore should be also allowable over Kawabata for similar reasons. Applicants further note that, as described above, Yao

does not cure these deficiencies in Kawabata. For example, as described above, neither Yao nor Kawabata discloses at least the limitation from claim of embedding queuing information in a data block. Thus, claim 14 is also allowable over the combination of Kawabata and Yao. Claims 18 and 26-28 depend from claim 14 and are also allowable at least for the same reasons as claim 14, as well as for the additional features recited in these dependent claims.

Based at least on the above, Applicants respectfully submit that the cited references of Kawabata and Yao fail to disclose or suggest all of the features recited in claims 18 and 26-28. Accordingly, withdrawal of this rejection under 35 U.S.C. §103(a) and reconsideration of these claims are respectfully requested.

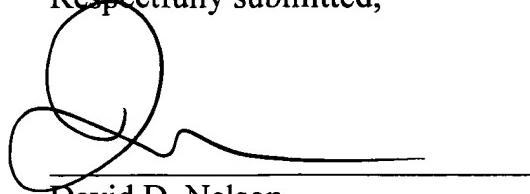
Conclusion

Applicants respectfully submit that each of claims 1, 3-4, 7-9, 13-16, and 18-32 recites features that are neither disclosed nor suggested in any of the cited references. Accordingly, it is respectfully requested that each of claims 1, 3-4, 7-9, 13-16, and 18-32 be allowed, and this application be passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



David D. Nelson
Registration No. 47,818

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Tysons Corner, Virginia 22182-6212
Telephone: 703-720-7800
Fax: 703-720-7802

DDN/cqc